Abstract

A spectrometer energizes a solid sate oscillator to generate a submillimeter wave and to sweep a predetermined band of frequency. The submillimeter wave is introduced into a sample cell that contains a gas, and frequency markers are electrically generated during the sweep. Outputs of a solid state detector disposed in the sample cell are read and recorded as a function of time and with the frequency markers. The recorded outputs of the solid state detector are converted into a function of frequency using the recorded frequency markers.